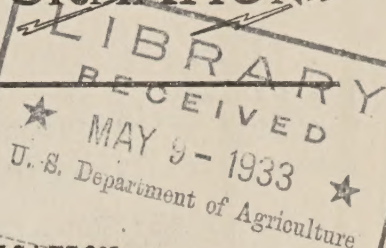


Historic, Archive Document

Do not assume content reflects current scientific knowledge, policies, or practices.



Irrigation Series - No. 6.

FURROW AND CORRUGATION METHODS OF IRRIGATION:

A radio interview of A. Lincoln Fellows, Senior Irrigation Engineer, Division of Irrigation, Bureau of Agricultural Engineering, United States Department of Agriculture, by R. E. Lamb during the Western Farm and Home Hour Tuesday, April 11, 1933, over Station KGO and nine other stations associated with the Pacific Division, National Broadcasting Company.

-- -o00o- --

LAMB: Mr. Fellows, in answering a question regarding the preparation of land for irrigation two weeks ago, you mentioned the furrow and corrugation methods of irrigating. Just what is the difference between those two methods?

FELLOWS: First let us see to what extent the two methods are identical, and then consider wherein they differ: In both methods the irrigation water is applied by allowing it to run down small channels (furrows) spaced rather close together until the soil under and between the channels is well moistened. The main differences are that the corrugation method is used for the irrigation of such field crops as cereal grains and forage, while the furrow method is used for row crops, such as potatoes, corn, beans, onions, etc., and also in orchards; and that the channels are generally smaller and perhaps closer together in the corrugation method than they are in the furrow method. As a matter of fact, Mr. Lamb, the corrugation method is simply a modification of the furrow method.

LAMB: Can you state in general terms when the furrow method should be used?

FELLOWS: I should say that it is in the irrigation of such crops as are ordinarily planted in rows and kept cultivated throughout the season. Under such conditions it is usually most convenient to apply the water in furrows between the rows. Some crops, potatoes, for instance, do not do well if the irrigation water is allowed to cover the whole surface of the ground and come in contact with the plants. In such cases the water is kept in the furrows and the soil next to the growing plants is not saturated, but still is kept mellow.

LAMB: Under what conditions is the corrugation method used?

FELLOWS: In general, it is used for the irrigation of field crops where the conditions are not favorable for the border method, which will be described at some future time. Any of the following conditions may make it desirable to use the corrugation method: The soil may be of such a nature that it bakes and cracks after being flooded, to such an extent that seedlings cannot force their way through the crust; the slopes may be so steep that serious erosion would take place if large streams were turned on to the soil in flooding operations; the available supply of water may be so small that it is not possible to spread it efficiently over the surface;

(over)

the surface of the land may be too uneven to permit uniform distribution by flooding while the corrugations can be made deep enough to carry the water through the high places.

LAMB: What methods are used to control the streams allowed to flow into the furrows.

FELLOWS: The simplest method, one that works quite satisfactorily where conditions are favorable, is to cut temporary outlets with a shovel in the earth bank of the ditch, these outlets to be refilled when they have served their purpose. A better plan where there is danger of erosion of the soil or where the installation is to be relatively permanent, is to use some sort of metal or wood pipe to carry the water through the bank to each furrow. Wood tubes or pipes, sometimes called spiles, may be made of four pieces of lath nailed together, or of specially dressed strips which form a wood pipe when nailed together.

Where the water is distributed through flumes, troughs, or pipes small openings controlled by gates are provided for the regulation of the flow to the individual furrows. This is a very satisfactory way to apply irrigation water and furnishes a practical method of controlling the flow.

LAMB: How long should furrows or corrugations be?

FELLOWS: The length varies with the type of soil and the steepness of the slope. With sandy soil and either very light or very steep slopes the furrows will have to be short, perhaps not more than 150 feet in length. With clayey soil and moderate slopes the furrows can be a quarter of a mile long without serious loss of water. Distance between furrows and size of furrows also vary with conditions.

LAMB: What bulletins have you that tell about these methods of irrigating?

FELLOWS: Farmers' Bulletin 864, "Practical Information for Beginners in Irrigation"; F.B. 1348, "The Corrugation Method of Irrigation"; and F.B. 1518, "Orchard Irrigation", are perhaps the best. The Superintendent of Documents at Washington, D. C., is authorized to sell these, the first at 10¢, and each of the other two at 5¢. As I have said before, if any of the audience will write to Mr. Lamb, care of this station, or to the Bureau of Agricultural Engineering, Box 180, Berkeley, California, he will receive a list of bulletins on irrigation and drainage giving prices at which they may be obtained from the Superintendent of Documents at Washington, D.C.

- - - - -